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Docket No.: KCC-17,458

THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Roger Bradshaw QUINCY, III

Group No.: 3761

Serial No: 10/037,466

Filing Date: 21 December 2001

Examiner:
Catharine L. Anderson

Title: ANTIMICROBIAL NONWOVEN WEBS FOR
PERSONAL CARE ABSORBENT ARTICLES

**DECLARATION OF ROGER B. QUINCY, III
PURSUANT TO 37 C.F.R. §1.131(a)**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

I, Roger B. Quincy, III, declare as follows:

1. I am employed by the Kimberly-Clark Corporation. I am the sole inventor of the subject matter claimed in U.S. Patent Application Serial No. 10/037,466, entitled "ANTIMICROBIAL NONWOVEN WEBS FOR PERSONAL CARE ABSORBENT ARTICLES."

2. Prior to 06 September 2001, I conceived the idea of treating a fibrous nonwoven web with a halogenated polystyrene hydantoin in which only the amide nitrogen atoms, and not the imide nitrogen atoms, would be halogenated. Halogenated polystyrene hydantoins having chlorine atoms linked to both (amide and imide) nitrogen atoms had been shown to exhibit biocidal activity, but released unacceptable levels of free chlorine. I proposed that only partial chlorination of the polystyrene hydantoin, to fill the amide site but not the imide site, could produce a material that is more stable yet less active.

I hereby certify that this correspondence (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

02 June 2004

02 June 2004

Date

Roger B. Quincy

Signature

3. Prior to 06 September 2001, I approached HaloSource Corporation ("HaloSource") with my proposal. HaloSource had previously supplied a chlorinated polystyrene hydantoin designated Poly-1-C1, believed to have chlorine linkages present on imide and amide nitrogen sites. Following my proposal, HaloSource provided me with a new version of chlorinated polystyrene hydantoin, designated Poly-1-C1, Type 2, responsive to my proposal.

4. Prior to 06 September 2001, I treated nonwoven fabric samples with Poly-1-C1, Type 2, and evaluated the samples for biocidal activity. The treated fabric samples exhibited useful levels of biocidal activity and substantially reduced levels of free chlorine emission. This work has been documented on the following pages of my laboratory notebooks, copies of which are enclosed with dates redacted:

Laboratory Notebook P-7259, page 119; and

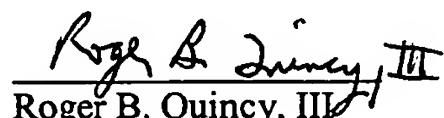
Laboratory Notebook P-7952, pages 59-62 and 69-80.

All of the foregoing notebook entries were documented prior to 06 September 2001.

5. All statements herein based on my own knowledge are true, and all statements made on information and belief are believed to be true. I acknowledge that willful false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. §1001) and may jeopardize the validity of this patent application or any patent issuing thereon.

6. Because of my unfamiliarity with the preparation of legal documents, I have been assisted in drafting this Declaration by an attorney of record, Maxwell J. Petersen.

Respectfully submitted,



Roger B. Quincy, III

Date: May 21, 2004



Corporation Serial No... P - 7259
Lab. or Department... Non-^{exempt} Tech. ^{Group}
Project No. or Nos.
Date of First Entry
Date of Last Entry
Lab. or Dept. Head
Investigator ... Roger L. Quincy
Investigator
Investigator

LABORATORY NOTEBOOK

Treatment for Odor Control

Charged to ... Roger Quincy Date
Signatures of Investigators

.....
.....
.....
.....

Approved By
UNIT MANAGER
DEPARTMENT
DATE
.....

TITLE N-Halomic Chlorine Binding Idea

PROJECT NO. 57424

BOOK NO. P-7259

From Page No. —

At a meeting with Halosource at Neenah Conference City on [REDACTED], we were discussing the 2 chlorine binding sites on the hydantoin moiety attached to polyacrylate (called polyacrylate hydantoin or PSH). One of two chlorine is more labile than the other.

After the PSH has been converted to Poly-1-Cl (polyacrylate N-Halomic), I asked Halosource (Jeff Williams, et al.) if we could get a Poly-1-Cl that had only the tightly bound chlorine, then figure out a way to provide a structure with only tightly bound chlorine (no labile chlorine since this would be a product safety concern).

R.B. Dzing [REDACTED]

Quincy, Roger

From: Quincy, Roger
 Sent: Wednesday, [REDACTED] 5:34 PM
 To: Gadsby, Elizabeth
 Subject: RE: Invention Disclosure

Thanks for the feedback. I'll think about it. I'm more interested in trying to see if the PSH can be attached to SAP and become active via a moist bleach environment. Maybe it would be best for now to document the suggestion in your minutes so we have a record of proposing the idea to HaloSource. I would expect they could use a hydantoin that has only 1 hydrogen available for conversion to Cl or Br, instead of the 2 hydrogens on their PSH. They should also be able to put electron withdrawing groups on the hydantoin adjacent to the H which might bind the chlorine more tightly. I'll have to discuss this more with Y. Liu, our resident organic chemist.

—Original Message—

From: Gadsby, Elizabeth
 Sent: Tuesday, [REDACTED] 4:03 PM
 To: Quincy, Roger
 Subject: Invention Disclosure

Roger:

As I am preparing the meeting minutes from the HaloSource meeting, I remembered the excellent idea that you had about manipulating the strength of the chlorine-binding sites. I was wondering if you wanted to consider preparing an invention disclosure on the concept. I think it is unique and HaloSource expressed that they had not been considering the needs to strengthen the bonds. It is also, a possible modification we would want to use to allow us to have improved product aging, processability, and maybe safety.

Best regards,
 Elizabeth

To Page No.

Work done by Roger B. Dzing

Date [REDACTED]

Witnessed [REDACTED]

Recorded by Roger B. Dzing

Date [REDACTED]

Witnessed [REDACTED]



Corporation Serial No. P-7952
Lab. or Department NT
Project No. or Nos. 57596
Date of First Entry
Date of Last Entry
Lab. or Dept. Head
Investigator R. B. Drury
Investigator
Investigator

LABORATORY NOTEBOOK

Ode control strategies

Charged to R. B. Drury Date
Signatures of Investigators

.....
.....
.....
.....

Approved By
UNIT MANAGER

DEPARTMENT

DATE

PROPERTY OF KIMBERLY-CLARK CORPORATION

PROJECT NO. 57596
BOOK NO. P-7952

TITLE Poly-Cl Type-2

From Page No. — *Background: At a meeting with Helsonice Corp. at Neen Conference Center on [REDACTED], I requested that Helsonice provide K-C with a Poly-Cl (polyvinyl N-Helonic) that contained only tightly bound chlorine (see documentation of this idea on p 119 p-7959). Helsonice claims to have been able to reduce the idea to practice and has supplied Poly-Cl Type-2 for our evaluation.*

Proposed Evaluation for Poly-Cl Type-2:

- ① Test the headspace above the particles with a Chlorine Degrade tube. This will tell us if any volatile chlorine compounds are being given off by the Poly-Cl Type-2 particles.
- ② Test a fabric structure that contains Poly-Cl Type-2 particles with the Chlorine Degrade tube to see if any volatile chlorine compounds are being given off.
- ③ Evaluate antimicrobial properties for a fabric structure that contains Poly-Cl Type-2 particles.

Prep of fabric structure with Poly-Cl Type-2:

— use the走行式Handsheet Forming (HSF) to produce 500gm fibref sheet with 5% Poly-Cl Type-2 (lot HS039-77-3, rec. from Helsonice 7/01) and without any Poly-Cl Type-2.

The handsheet form area is 0.258 m²

A piece of tissue lining paper was placed on top of the plate (~0.5 cm mesh size) in the HSF box. The fibreged pulp (believed to be SW16) was divided into 4 sections (112.5g total weight before dividing). Poly-Cl Type-2 (6.45g) was distributed among the 4 pulp sections. The Poly-Cl Type-2 + pulp was folded like a tree and pieces were broken off and fed into the HSF heads. The conditions used for the HSF were: dust collector vacuum on, vav pump on top section (60Hz), 40psi pulsed air into HSF, 1000 rpm blade speed

(cont) *CD/SD*

To Page No. 60

Approved by
Roger B. Loring, R.E.T.

Reviewed by
Roger D. Loring

Date [REDACTED]
0-10

Witnessed by
[REDACTED]

PROJECT NO. 57596
BOOK NO. P-7952

TITLE Polyf-Cl Type-2

From Page No. 59

Contd.

A control (500 gram fluff sheet without Polyf-Cl Type-2) was made via the same HSF conditions (see p. 59, P-7952). 129 g of the fiberized poly was used.

The two backsheets were specified by applying a light mist of Lub 1085 (mixed with (Dow) to both sides (each backsheet had two large grommets the poly layer) using a spray apparatus (description can be seen on p. 193, P-6958), followed by pressing with a Lamm Press (no heat) to a thickness of 0.125 inch (4 0.125 inch shims are placed between the two plates) for 5 minutes. Each of the rigid plates was cut into four 9" x 9" sections to accommodate the size of the Lamm press plates ($\approx 12\frac{1}{4}'' \times 12\frac{1}{4}''$).

Also, a piece of release paper was placed on the top and bottom of each 9" x 9" section before pressing with the Lamm press. This kept the top and bottom of each section from coming in contact with the steel plates of the press. The 4 sections from each of the two backsheets that were layered out on a surface (e.g. chin) to dry overnight. The backsheet and sections will be labeled as follows:

Label	Description							
7952-60-PA	52. Polyf-Cl Type-2 / poly backsheet section A							
7952-60-PB	" " " " " " " " B							
7952-60-PC	" " " " " " " " C							
7952-60-PD	" " " " " " " " D							

To Page No. 61

Work done by Roger B. Dury, R.F.D.
Recorded by Roger B. Dury

Date [REDACTED]
Witnessed [REDACTED]

Date [REDACTED]
6865

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PROJECT NO. 57596
BOOK NO. P-7952

TITLE Poly-Ie Type-2

From Page No. 60

Cont.

<u>Label</u>	<u>Description</u>									
7952-61-CA	poly subject Control section A									
7952-61-CB	n n n n B									
7952-61-CC	n n n n C									
7952-61-CD	n n n n D									
<hr/>										
<u>Antimicrobial Evaluation</u>										
A $\frac{1}{4}'' \times \frac{1}{4}''$ piece of the following codes will be sent to Viramed Biology Laboratories (down to be AppTec Laboratory Service) for AATCC method 100 (modified). Three microorganism will be tested (S. aureus ATCC 6538, E. coli ATCC 8739, P. mirabilis ATCC 4630) and 5 dilutions will be done (down to 10^1 Colony forming units (CFU)).										
<u>Codes for Viramed</u>										
7952-60-PA										
- PB										
- PC										
- PD										
7952-61-CB										
- CD										
<hr/>										
To Page No. 62										

RECORDED BY: ROGER B. DING

Work done by Roger B. Ding
Recorded by Roger B. DingDate 10/24/94
Date 10/24/94Witnessed John J. Sauer
Witnessed John J. SauerDate 10/24/94
Date 10/24/94

PROPERTY OF KIMBERLY-CLARK CORPORATION

TITLE Poly1-Cl Type-2

57596
P-7952

From Page No. 61

ViroMed letter

RAB

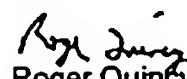


Ms. Karen Alexander
ViroMed Biosafety Laboratories
1265-B Kennestone Circle
Marietta, GA 30066

Dear Ms. Alexander,

Please find six fabric samples (5" by 5") for microbiology test AATCC Method 100 (modified). As we discussed earlier this week, I would like to have 3 organisms (S. aureus ATCC 6538, E. coli ATCC 8739, P. mirabilis ATCC 4630) tested per sample using a 4 hour contact time with 5 dilutions. For reference, a similar procedure (only 4 dilutions) can be found in a previous report sent to me (Report Number: F0816018). The purchase order for this work is #15VB8653CB. Thanks for your help. Please contact me if you have any questions.

Sincerely,


Roger Quincy
Nonwoven Technology



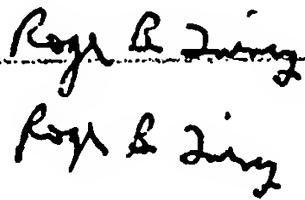
1400 Holcomb Bridge Road
Roswell, GA 30076-2199
(770) 587-7884
(770) 587-7703 Facsimile
E-mail: rquincy@kcc.com

Roger B. Quincy, Ph.D.
Nonwoven Technology

Kimberly-Clark Corporation

1400 Holcomb Bridge Road Roswell, Georgia 30076 (770) 587-8000

Written on by
Recorded by


Roger B. Quincy

Printed on by To be maintained in Confidential

69

PROPERTY OF KIMBERLY-CLARK CORPORATION

PROJECT NO. 57596
BOOK NO. P-7952TITLE Poly 1 - Cl Type-262 Results from ViroMed

RBO

12:21 VIROMED → 7705877703

NO. 517 002

**ViroMed**

Labsoratories, Inc.

CLIENT TECHNICAL PROCEDURE

UNCONTROLLED COPY

Document #: GM210KMC.01

QA Approval: Thompson

Section: General Microbiology

Technical Approval: J. AlexanderEffective Date:

Revision #: 1

Page 1 of 1

Client: Kimberly ClarkProduct(s): Absorbent FabricTest Method: AATCC Test Method 100 (Modified)

Procedure:

Test Portion: 4-5 cm squareContainer: Petri DishTest Organism: (1) S. aureus ATCC # 6538, (2) E. coli ATCC # 8739, (3) P. mirabilis ATCC # 4630Inoculum level: Approximately 10⁶Time Intervals/
Incubation: 0° / NA, 4 hours / 35°C - 39°CDiluent: Lethen BrothAmount: 100 mLExtraction Method/Time: Stomaching / 2 minutes

Plating and Incubation:

Aliquot or
Dilution Plated: 10¹, 10², 10³, 10⁴, 10⁵Culture Medium: Tryptic Soy AgarTemperature: 30°-35°CTime: 2 daysComments: NAForm # GMCTP.1
Rev. 1

CONFIDENTIAL

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ACR

70

Work done by

ViroMed

Recorded by

Rog A. Dury

Date

Witnessed

Date

Witnessed

Proprietary to Be Maintained in Confidence

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TITLE *Poly-CU Type-2*57596
P-7952

From Page No.

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cont

P-7952

RBD**ViroMed**

Labsoratories, Inc.

ViroMed's biosafety laboratories
are becoming**APPTEC**
LABORATORYThis report is confidential. It is to be used for
evaluating a single product against a single test
method only. It is not to be used for
any other purpose.Report Number:
G0823032Kimberly-Clark
1400 Holcomb Bridge Road
Roswell, GA 30076-2199

P.O. #: 15VB8653CB

Attn: Dr. Roger B. Quincy

GENERAL MICROBIOLOGY TEST REPORT

Sample Information: Fabric Sample, 7952-61-CD

Date Received: *August 2001*
Date in Test: *_____*
Date Completed: *_____*Test Information: AATCC Method 100 (modified)
Procedure #: GM210KMC.01
Culture Medium: Tryptic Soy Agar
Neutralizer Solution: Lethen Broth

Test Sample and Organism	<i>S. aureus</i> ATCC 6538	<i>E. coli</i> ATCC 8739	<i>P. mirabilis</i> ATCC 4630
Inoculum Concentration	8.4×10^6	4.7×10^7	3.4×10^6
Initial Contact Time	1.1×10^7	4.5×10^7	3.7×10^6
4 Hour Contact Time	1.7×10^7	5.1×10^7	6.2×10^5
Percent Reduction	NR	NR	83.24%

NR = No Reduction

Katia Bartolotti

Departmental Review

Karen Alexander

Technical Review

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Work done by *Vincent*
Recorded by *Roger B. Quincy*Prepared by *John* for *Karen Alexander* in *Technical Review**71*

UNIVERSITY OF KIMBERLY-CLARK CORPORATION

Sch-1A Type-2

70

Cont.PROJECT NO. 57596
STOCK NO. P-7952

R6Q



VIOMED

Laboratories, Inc.

ViroMed's biosafety laboratories
are becoming**APPTEC**
LABORATORYReport Number:
G0823029Kimberly-Clark
1400 Holcomb Bridge Road
Roswell, GA 30076-2199

P.O. #: 15VB8653CB

Attn: Dr. Roger B. Quincy

GENERAL MICROBIOLOGY TEST REPORT

Sample Information: Fabric Sample, 7952-61-CB

Date Received:

Date in Test:

Date Completed:

Test Information:

AATCC Method 100 (modified)
Procedure #: GM210KMC.01
Culture Medium: Tryptic Soy Agar
Neutralizer Solution: Lethen Broth

Test Sample and Organism	<i>S. aureus</i> ATCC 6538	<i>E. coli</i> ATCC 8739	<i>P. mirabilis</i> ATCC 4630
Inoculum Concentration	8.4×10^6	4.7×10^7	3.4×10^6
Initial Contact Time	5.1×10^6	2.8×10^7	2.3×10^6
4 Hour Contact Time	1.3×10^7	2.9×10^7	3.1×10^5
Percent Reduction	NR	NR	86.52%

NR = No Reduction

Kateri Butcher

Departmental Review

Kare Alexander

Technical Review

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AEG

To Page No. 72

ViroMed

Roger B. Quincy

Witnessed

Witnessed

I, the undersigned, In the Name and on Behalf of the Company, In the Capacity in Conference

Poly-CU Type-2

57596
P-7952

71

conts



ViroMed Laboratories, Inc.

ViroMed's biosafety laboratories
are becoming

AppTec
LABORATORY

1265 B Kennesaw Circle • Marietta, GA 30066 • 888.847.6633 • 770.514.0262 • Fax 770.514.0294
E-mail: info@viromed.com • Website: www.viromed.com

Report Number:
G0823027

R&Q

Kimberly-Clark
1400 Holcomb Bridge Road
Roswell, GA 30076-2199

P.O. #: 15VB8653CB

Attn: Dr. Roger B. Quincy

GENERAL MICROBIOLOGY TEST REPORT

Sample Information: Fabric Sample, 7952-60-PD

Date Received:

Date in Test:

Date Completed:

Test Information:

AATCC Method 100 (modified)

Procedure #: GM210KMC.01

Culture Medium: Tryptic Soy Agar

Neutralizer Solution: Lethen Broth

Test Sample and Organism	<i>S. aureus</i> ATCC 8538	<i>E. coli</i> ATCC 8739	<i>P. mirabilis</i> ATCC 4630
Inoculum Concentration	8.4×10^6	4.7×10^7	3.4×10^6
Initial Contact Time	2.7×10^7	8.7×10^8	1.9×10^5
4 Hour Contact Time	3.0×10^1	1.0×10^1	5.5×10^1
Percent Reduction	99.99%	99.99%	99.97%

Katia Bartoletti

Departmental Review

Karen Alexander

Technical Review

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KC

73

ViroMed

Roger B. Quincy

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Poly 1-Cl type-2

PROJECT NO. 57596
BOOK NO. P-79272 Cont.

ViroMed

ViroMed's biosafety laboratories
are becoming**APP Tec**
LABORATORY

Laboratories, Inc.

R&Q

Report Number:
G0823030Kimberly-Clark
1400 Holcomb Bridge Road
Roswell, GA 30076-2199

P.O. #: 15VB8653CB

Attn: Dr. Roger B. Quincy

GENERAL MICROBIOLOGY TEST REPORT

Sample Information: Fabric Sample, 7952-60-PC

Date Received:

Date In Test:

Date Completed:

Test Information:

AATCC Method 100 (modified)
Procedure #: GM210KMC.01
Culture Medium: Tryptic Soy Agar
Neutralizer Solution: Lethen Broth

Test Sample and Organism	<i>S. aureus</i> ATCC 6538	<i>E. coli</i> ATCC 8739	<i>P. mirabilis</i> ATCC 4630
Inoculum Concentration	8.4×10^6	4.7×10^7	3.4×10^6
Initial Contact Time	8.7×10^6	2.3×10^6	See Note
4 Hour Contact Time	$< 1.0 \times 10^1$	1.2×10^2	1.0×10^1
Percent Reduction	99.99%	99.99%	99.99%

Note: Due to unusually low counts for initial contact time, the inoculum concentration was used for calculation of percent reduction per client request.

Karen Bartforth
Departmental ReviewKaren Alexander
Technical Review

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R&Q

To Page No. 74Work done by ViroMed

Date

Witnessed

Recorded by Roger B. Quincy

Date

Witnessed

PROPERTY OF KIMBERLY-CLARK CORPORATION

TITLE *Polyk-CC Type-2*PROJECT NO. 57596
BOOK NO. P-7952From Page No. 73*Cuts**R&Q***ViroMed**

Laboratories, Inc.

ViroMed's biosafety laboratories
are becoming**APPTEC**
LABORATORYThis report is confidential. It may not be used for
advertising, publicity or management without written
authorization. Results apply only to the samples
tested.Report Number:
G0823028Kimberly-Clark
1400 Holcomb Bridge Road
Roswell, GA 30076-2199

P.O. #: 15VB8653CB

Attn: Dr. Roger B. Quincy

GENERAL MICROBIOLOGY TEST REPORT**Sample Information:**

Fabric Sample, 7952-60-PB

Date Received:**Date In Test:****Date Completed:****Test Information:**

AATCC Method 100 (modified)

Procedure #: GM210KMC.01

Culture Medium: Tryptic Soy Agar

Neutralizer Solution: Lethen Broth

Test Sample and Organism	<i>S. aureus</i> ATCC 6538	<i>E. coli</i> ATCC 8739	<i>P. mirabilis</i> ATCC 4630
Inoculum Concentration	8.4×10^6	4.7×10^7	3.4×10^6
Initial Contact Time	1.0×10^7	2.7×10^7	4.4×10^6
4 Hour Contact Time	5.0×10^1	3.0×10^1	2.5×10^1
Percent Reduction	99.99%	99.99%	99.99%

Katie Balowith

Departmental Review

Karen Alexander

Technical Review

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To Page No. 75

Work done by

Vironed

Date

Witnessed

J. G. J. J.

Enclosed by

Roger B. Quincy

Date

Witnessed

Date

PROPERTY OF KIMBERLY-CLARK CORPORATION

PROJECT NO. 57596
BOOK NO. P-7952*Poly1-CL Type-2*

74

*Costo**RSQ***ViroMed**

Laboratories, Inc.

ViroMed's biosafety laboratories
are becomingThe AppTec Laboratory is a full-service laboratory that provides
comprehensive testing services for a wide range of products and materials.Report Number:
G0823031Kimberly-Clark
1400 Holcomb Bridge Road
Roswell, GA 30076-2199

P.O. #: 15VB8653CB

Attn: Dr. Roger B. Quincy

GENERAL MICROBIOLOGY TEST REPORT

Sample Information: Fabric Sample, 7952-60-PA

Date Received:

Date in Test:

Date Completed:

Test Information:

AATCC Method 100 (modified)
Procedure #: GM210KMC.01
Culture Medium: Tryptic Soy Agar
Neutralizer Solution: Lethen Broth

Test Sample and Organism	<i>S. aureus</i> ATCC 6538	<i>E. coli</i> ATCC 8739	<i>P. mirabilis</i> ATCC 4630
Inoculum Concentration	8.4×10^6	4.7×10^7	3.4×10^8
Initial Contact Time	1.0×10^7	2.4×10^7	1.6×10^5
4 Hour Contact Time	$< 1.0 \times 10^1$	3.3×10^1	$< 1.0 \times 10^1$
Percent Reduction	99.99%	99.99%	99.99%

Katrin Bartolucci
Departmental Review*Karen Alexander*
Technical Review

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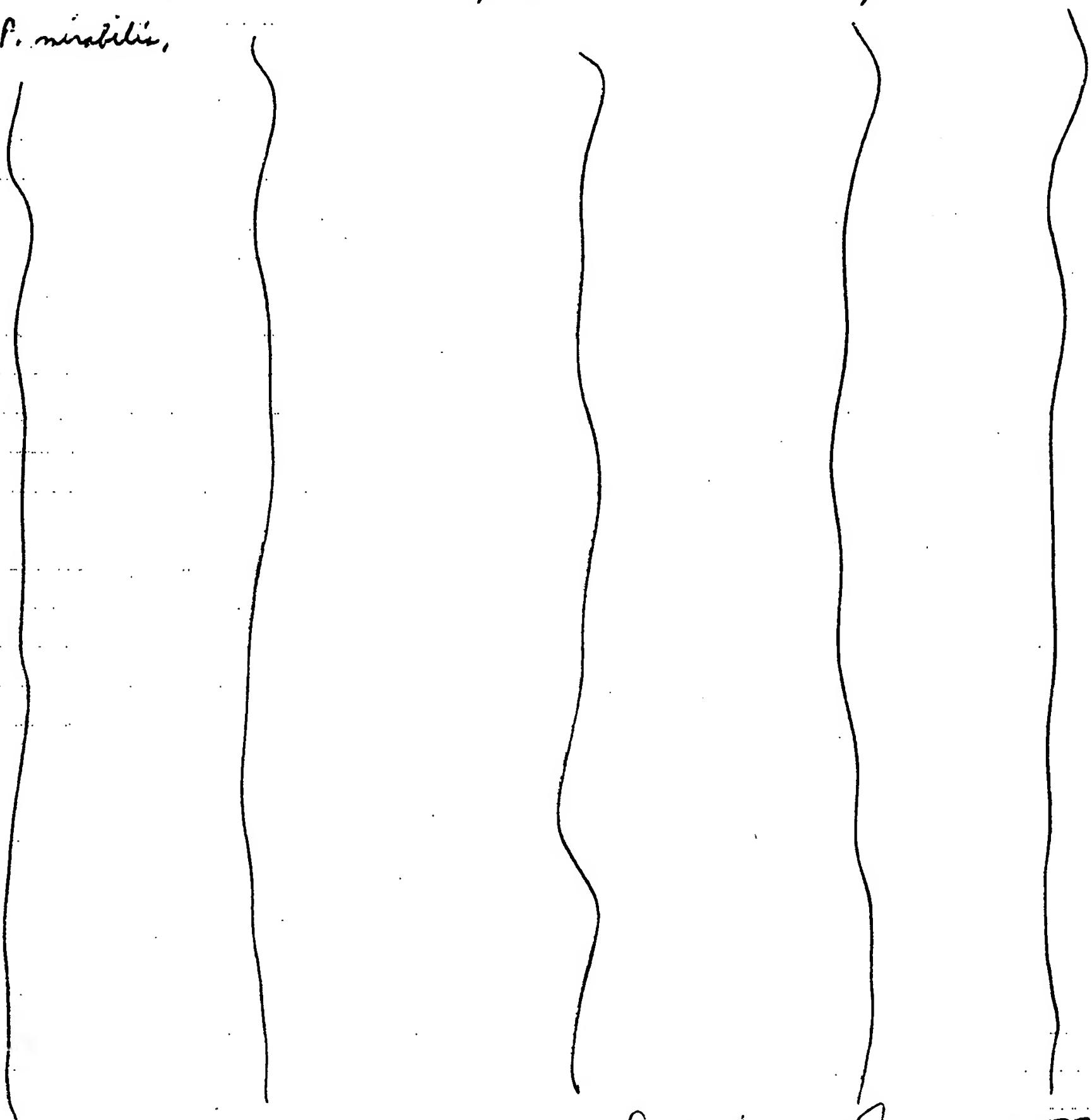
*ACG*To Page No. **76***ViroMed**Roger B. Quincy*Date *[Redacted]*Witnessed *[Signature]*Date *[Redacted]*Date *[Redacted]*Witnessed *[Signature]*Date *[Redacted]*

57596
P-7952Poly- α Type-2

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Summary of Tested Results:

All of the 5th Poly- α Type-2 / fluff samples (i.e., 7952-60-PA, PB, PC and -PD) show excellent antimicrobial properties towards *S. aureus*, *E. coli*, and *P. mirabilis*.



Roger B. Dilling
Roger B. Dilling

[REDACTED]

CGM
CJM
Signature

77

[REDACTED]

TITLE Poly-Cl Type-2

PROJECT NO. 57596

BOOK NO. A-7952

From Page No.

76 Drug Tube Experiments to evaluate the leachate about various
Poly-Cl samples for chlorine gases.

Cl Drug Tube Expts. for Poly-Cl samples

R&Q

Sample

Description

1A

"High Cl" Poly-Cl tested by Phil See (AS) and J. Brooks (AC) in [REDACTED]

0.0509g sealed in 20cc leachate vial at 5:06p [REDACTED]

2B

Poly-Cl w/ Sibb, rec. 3/27/01 from J. Williams (Hobson)

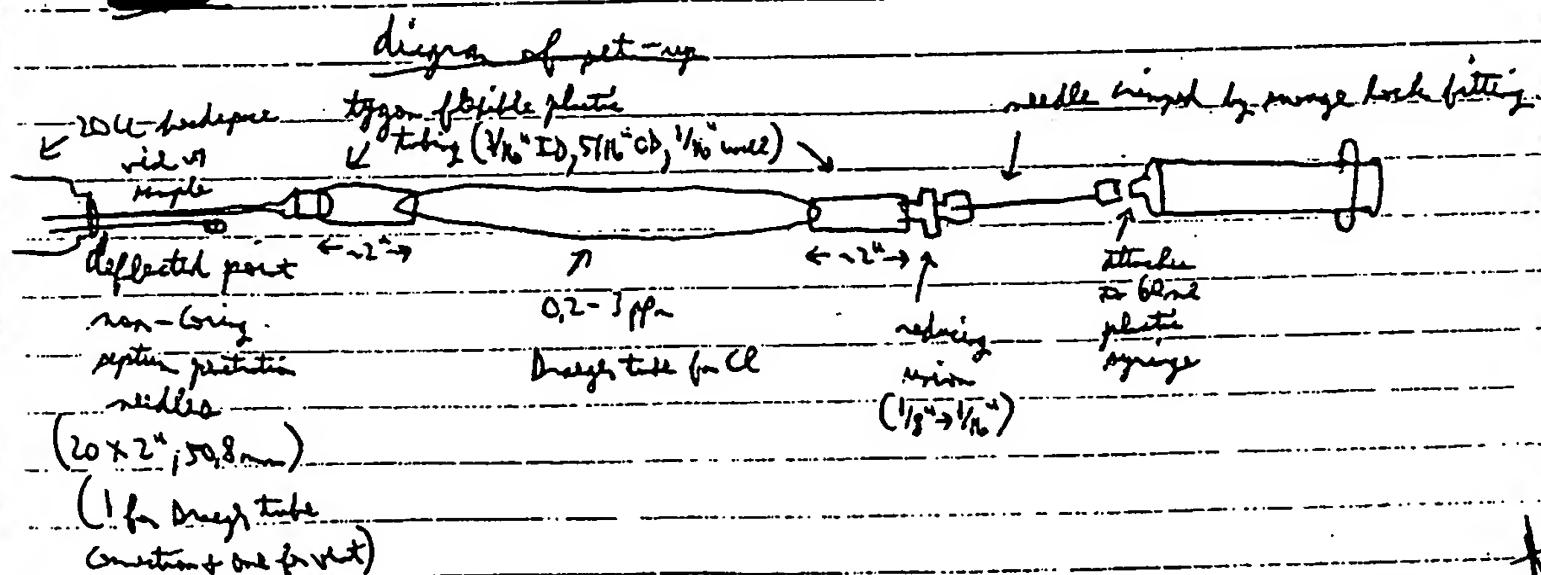
0.0499g sealed in 20cc leachate vial at 5:11p [REDACTED]

3C

Poly-Cl before Sibb (AS-030-19-1), rec. from J. Williams (100g)

on [REDACTED]

0.0500g sealed in 20cc leachate vial at 5:11p [REDACTED]



To Page No. 78

Work done by R. Quing, R. Brooks

Date [REDACTED]

Witnessed [REDACTED]

Recorded by

Rogelio L. Diaz

Date [REDACTED]

Witnessed [REDACTED]

Date [REDACTED]

PROPERTY OF KIMBERLY-CLARK CORPORATION

PROJECT NO. 57596

BOOK NO. P-7952

TITLE Poly-Cl - Type-2

From Page No. 77 Cont.Cl Drags Test Expt. for Poly-Cl samples

Sample# time 60 ml volumes comments

1A	2:07p	1	tan-brown color develops in tube to reading of 0.2 ppm, syringe stays at 60 ml when let go (\Rightarrow no vacuum created)
	2:13p	1 more	tan-brown color to $\sim \frac{1}{3}$ between 0.2 and 0.5 ppm (\uparrow)
	2:16p	1 more	tan-brown color almost reaches 0.5 ppm (\uparrow)
	2:18p	1 more	" " " at 0.5 ppm (\uparrow)
	2:19p	1 more	" " " after 0.5 ppm and 1 ppm (cell it 0.6 ppm) (\uparrow) -0.7 ppm

Note: Cut new piece of tygon tubing after sample needle and new drags tube before analyzing sample 2B.

2B 2:31p 1 tan-brown color developed rapidly and was above the 3 ppm max. reading after completing 60 ml stroke; syringe stays at 60 ml when let go (\Rightarrow no vacuum created).

Note: Sample "1A" was lighter in color (less tan, more white) than samples "2B" or "3C".

3C Is this due to more Cl in samples "2B" and "3C"?

3C 2:50p 1 tan-brown color developed rapidly and was above the 3 ppm max. reading after completing the 60 ml stroke; syringe stays at 60 ml when let go (\Rightarrow no vacuum created).

Note: Next test Vn Gel O w/ Poly-Cl for removal of residual chlorine.

To Page No. 79

Work done by Roger B. Dury

Date

Witnessed

Recorded by

Roger B. Dury

Date

Witnessed

Date

TITLE Poly-Cl Type-2

PROJECT NO. 57596
BOOK NO. A-7952From Page No. 78 Contd~~████████ → Cl Dose Tube Expt for new Poly-Cl (i.e. Poly-Cl Type 2)~~ RBB

- using Poly-Cl Type-2 (H5039-77-3, 54.3 g) → received from Halbrane

in ██████████

Sample #

080301-1 → 0.0521 g sealed in 20cc headspace vial at 11:11A ██████████

At ~4:18P ██████████ tested for Cl as follows: (Note: using same setup as described for ██████████ Expt.

<u>time</u>	<u>60ml volume</u>	<u>Comments</u>	<u>See headspace 200 book</u>
4:42P	1	no color	
4:43P	1 more	no color	
4:48P	1 more	" "	
4:50P	1 more	" "	
4:54P	1 more	sample a v. at time of the yellow color had devel. layed to a new time. The color was 0.144g well below the first mark of 0.2 ppm	

080301-5 → 0.0501 g Poly-Cl type 2 + 0.0488 g silver sealed in 20cc

headspace vial at 11:18A ██████████ Note → This amount of silver
resulted in a small amount of liquid appearing about 1/8 of the beads in
the glass of the vial. The other 7/8 of the beads appeared to be fixed to
the bottom of the vial, but liquid was not obvious. Did the polytype
short/short some of the vials?

<u>time</u>	<u>60ml volume</u>	<u>Comments</u>
5:02P	1	* 1st yellow color has developed but below the first
5:04P	1 more	→ the 1st yellow color is diffuse but about 0.2 ppm
5:06P	1 more	→ halfway to the first mark (0.2 ppm),
5:12P	1 more	diffuse but almost up to the 0.2 ppm mark
5:13P	1 more	" " " " " " " " " "

Note: The beads in this vial are light yellow in color layered to the white beads in sample 080301-1.
Slight liquid is visible, tried on one bright Cl test as used for sample 080301-1.
free at the edge of the beads (Contd next page)

To Page No. 80

Work done by Roger B. Dury

Date ██████████

Witnessed

Recorded by

Roger B. Dury

Date

██████████

Witnessed

Date

PROPERTY OF KIMBERLY-CLARK CORPORATION

PROJECT NO. 57596
BOOK NO. P-7952

TITLE Poly-Cl Type-2

From Page No. 79

Cont.

RBC

Cont. Cl Degr Tube Expt. for Poly-Cl Type-2 [REDACTED]

The old sample + sample that was too converted to the drug tube assembly (assembly was removed) was left inserted into the hydrogen coil for 080601-5 to see if any corrosion occurs (as seen for sample 3C for [REDACTED] Cl Degr Tube Expt. → see Headspace-6C 2000 book).

8/16/01 More Cl Degr Tube Expt. for Poly-Cl Type-2

Sample #

081601-1 → 0.0505 g sealed in 20cc Headspace coil at 4:11p [REDACTED]

At 4:12p, put 081601-1 into GC #1 oven w/ lid closed at 50°C.

At 4:32p, convert the drug tube assembly (see diagram in Headspace-6C-2000 book titled [REDACTED])

and pulled ~~to~~ fine bore where the drug tube. The tube became only v. slightly yellow-colored about $\frac{1}{2}$ in. from the first male + the first reading of 0.2 ppm. The color was not continuous; it was very diffuse (i.e., the yellow color was dispersed amongst uncolored (white) matrix (particle) in the tube.). The Poly-Cl Type-2 particles are the same color (white to off-white) as the original particles after being heated to 50°C and cooled to room temp. [REDACTED]

Conclusion: The new Poly-Cl (i.e., Poly-Cl Type-2) is considerably more stable in terms of releasing Chlorine, than the previous version (see pp. 77-78, P-7952). Need to work for potential interaction with the Poly-Cl Type-2 (e.g., in contact with liquid). (See above results on p. 79, P-7952).

To Page No. 119

Work done by Roger B. Derry, R. D. Derry

Witnessed

Recorded by

Roger B. Derry

Date

Witnessed

Date

TITLE Poly-Cl Type-2

PROJECT NO. 57596
BOOK NO. P-7952

From Page No.

80

More headspace chlorine data for Poly-Cl Type-2;

RBQ

~~_____~~ → observation for 080301-S

080301-S has had two needles submerged in the septa into the headspace vial since ~~_____~~. Today these needles were removed and observed for effect of Corrosion (see facing page) ~~_____~~ AEG

Cont'd 10/5/01 → observation for 080301-S

RBQ

Both needles showed small spot brown in color that coincides with the part of the needles that were in the septa material. There is not any discoloration (indicative of corrosion from headspace Cl_2) on the part of the needles that were submerged inside the headspace vial (with the Cl_2 and Poly-Cl Type-2 particles).

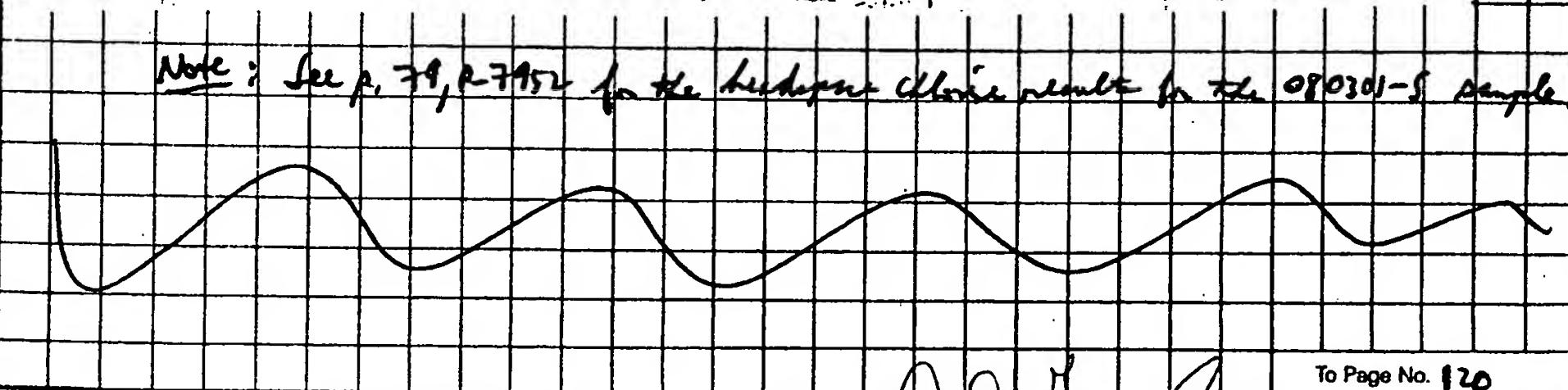
This result is different from the presumably Poly-Cl (type 1), in which a large amount of corrosion was observed for the submerged needle in the headspace vial with the Poly-Cl type 1 particles. Note → the Poly-Cl type 1 results showed lots of Cl_2 in the headspace

(See Cl data results for ~~_____~~).

To Headspace GC book.

AEG

Note: See p. 79, P-7952 for the headspace chlorine results for the 080301-S sample.



To Page No. 120

Work done by

Rough & Daigle

Date ~~_____~~Witnessed ~~_____~~

Recorded by

Rough & Daigle

Date ~~_____~~Witnessed ~~_____~~Date ~~_____~~Date ~~_____~~

PROPERTY OF KIMBERLY-CLARK CORPORATION

TITLE Poly-Cl Type-2

PROJECT NO. 57596

BOOK NO. P-7952

From Page No. 119

Contd.

RBR

~~████████~~ → Cl Degr. Tube Expts. for Poly-Cl Type 2

using Poly-Cl Type-2 (HS029-77-3, 543g) → received from Helium a

Sample #

101801-1 → 0.0504 g Poly-Cl Type 2 + 0.1455 g salic pulled in 20cc headspace
vial at 3:57p ~~████████~~

At 3:58p, put 101801-1 into GC #1 oven w/ lid closed at 37°C.

At 4:27p, connected the Degr. tube assembly (see diagram in Headspace-GC 2000 book dated ~~████████~~)
and pulled five 60 ml volumes thru the one Degr. tube. Comparison took fresh tube
against a white background. Results show a v. slight trace (slight yellowish color
"differ") right the first run, between the first and second the first reading of 0.2 ppm .
This should really be considered non-detectable.101801-2 → 0.0500 g Poly-Cl Type 2 + 0.1462 g salic pulled in 20cc headspace
vial at 4:03p ~~████████~~~~████████~~ → At 4:33p, put 101801-2 into GC #1 oven w/ lid closed and began heating oven from
37°C to 50°C. oven was at 50°C at 4:34p (actually a readout to 58°C, but to
50°C when checked at 4:40p)Note: Used the same Degr. tube for this sample, but used the one readline
new tube for sample 101801-1.At 4:51-4:55p, pulled five 60 ml volumes thru the connected new Degr. tube, on
Comparison to a fresh tube against a white background again showed slight ^{trace} _{in 50°C}
a very slight trace of the yellow color just like described for tube 101801-1.

To Page No. 121

Work done by Roger B. Derry
Recorded by Roger B. DerryDate ~~████████~~
Date ~~████████~~Witnessed *[Signature]*
Witnessed *[Signature]*Date ~~████████~~
Date ~~████████~~

PROPERTY OF KIMBERLY-CLARK CORPORATION

TITLE Poly1-Cl Type-2

PROJECT NO. 57596

BOOK NO. P-7952

From Page No. 120

Summary of all Headspace-Chlorine data for various Poly1-Cl samples;

RBQ

Quincy, Roger

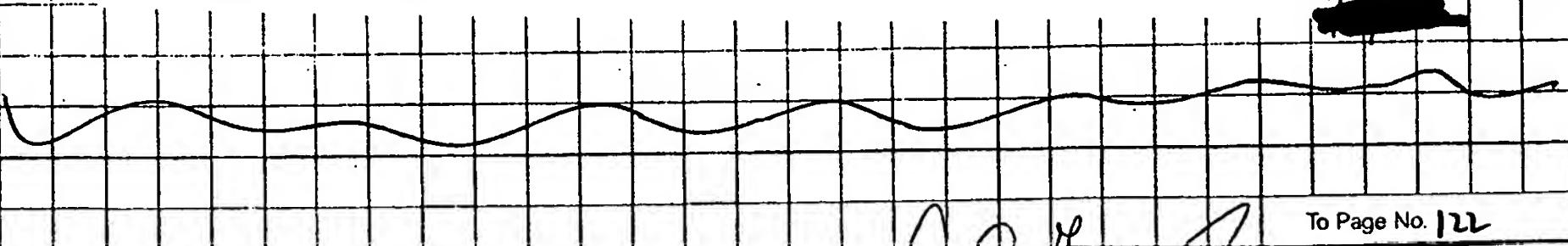
From: Quincy, Roger
 Sent: Tuesday, [REDACTED] 11:25 AM
 To: Laird, Sarah; Evans, Eric; Hansen, Dick; Berrier, Phillip; Wyatt, Nancy
 Cc: Gadsby, Elizabeth; Edens, Ron; Pike, Dan; Everhart, Cherie; Zabronsky, Jerry
 Subject: Poly1-Cl Headspace Chlorine Data

Here are the headspace chlorine data for the various Poly1-Cl samples, including the "wet, elevated temp." samples (requested from Product Safety Review Meeting). Please let me know if there is any other testing required for our requested safety clearance (for urine odor panel study)?

Poly1-Cl Type-2
Headspace Cl s...Headspace Chlorine Results for Poly1-ClBackground:

Drager tube CH 24301 (Chlorine 0.2/a) with a standard measuring range of 0.2 to 3 ppm was used to determine headspace chlorine levels for various Poly1-Cl samples. In the presence of chlorine gas (Cl₂), the tube will undergo a color change from white to yellow-orange. Bromine, chlorine dioxide, and nitrogen dioxide will also cause this color change. For an actual chlorine concentration of 0.2 to 3 ppm to be read from the tube, the requirement is for 10 strokes to be pulled through the tube using a Drager bellows type pump. Each stroke supplies 100 cm³. If only one stroke or 100 cm³ is pulled through the tube, then the measuring range for the tube will be 2 to 30 ppm. For the various Poly1-Cl samples, Poly1-Cl powder alone and in combination with saline was placed in a 20-cm³ headspace vial. The vial was crimped shut and left at ambient temperature for a desired length of time. Then, the vial was either tested for headspace chlorine or first placed in a GC oven at elevated temperature for a desired length of time before being tested. The headspace from the vial was tested for chlorine by piercing the septum of the vial cap with a needle that was attached to the Drager tube with rubber tubing. The headspace was removed with a 60-cm³ syringe that was attached to the other end of the Drager tube with rubber tubing. The septum of the vial cap was also pierced with a second needle in order for ambient air to replace the removed headspace air above the sample. The amount of headspace chlorine for a sample was calculated from the Drager tube reading, the number of 60-cm³ volumes removed, and the relationship that 1000 cm³ (10 strokes) must be pulled through the tube in order to read chlorine in a range of 0.2 to 3 ppm.

A-769



To Page No. 122

Scientific Binding Productions
1255 S. Wabash Chicago, IL 60605

Work done by

Roger B. Quincy

Date

Witnessed

Recorded by

Roger B. Quincy

Date

Witnessed

Date

PROJECT NO. 57596
BOOK NO. P-7952

TITLE Poly1-Cl Type-2

From Page No. 121

Cont. Summary

RBD

Results:

The following table shows the headspace chlorine data for various Poly1-Cl samples.

Sample	Details	Tube Reading	Calculated Amount	Calculated per Piece ¹
Poly1-Cl Type-1, Dry	12 days at room temp.	> 3 ppm	> 50 ppm	> 68 ppm
Poly1-Cl Type-2, Dry	6 days at room temp.	<<< 0.2 ppm	<<< 0.7 ppm	<<< 0.9 ppm
Poly1-Cl Type-2, Wet	+ 300% saline, 6 days at room temp.	< 0.2 ppm ²	< 0.7 ppm ²	< 0.9 ppm ²
Poly1-Cl Type-2, Dry, Elevated Temp.	1 day at room temp., 20 min. at 50°C	<< 0.2 ppm	<< 0.7 ppm	<< 0.9 ppm
Poly1-Cl Type-2, Wet, Elevated Temp.	+ 300% saline, 1 day at room temp., 30 min. at 37°C	<<< 0.2 ppm	<<< 0.7 ppm	<<< 0.9 ppm
Poly1-Cl Type-2, Wet, Elevated Temp.	+ 300% saline, 1 day at room temp., 20 min. at 50°C	<<< 0.2 ppm	<<< 0.7 ppm	<<< 0.9 ppm

¹ "Calculated per Piece" was determined by taking the "Calculated Amount" of chlorine, dividing by the weight of Poly1-Cl in the headspace tube (ca. 0.05 g), and then multiplying by the amount of Poly1-Cl in a 3-inch diameter piece of 600 gsm fluff that contains 2.5 wt% Poly1-Cl (0.0684 g). The urine odor panel study will use 3-inch diameter pieces of materials.

² These values were determined from a Drager tube that had been previously used for the "Poly1-Cl Type-2, Dry" sample. Therefore, the reported values are probably higher than values that would have occurred with a new tube. New tubes were used for all other samples.

To Page No. 123

Work done by

Rog & Drury

Date

Witnessed

Recorded by

Rog & Drury

Date

Witnessed

Date

Date